

## Exploring Thermometers

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_

### *Question to investigate*

What makes the liquid in a thermometer go up and down?

### *Materials for each group*

Student thermometer

Magnifier

Cold water

Hot water (about 50 °C)

### *Procedure*

A. Look closely at the parts of a thermometer.

1. Look closely at your thermometer. The liquid inside is probably a type of alcohol that's been dyed red.

2. Practice reading the temperature in °C by having your eye at the same level as the top of the red liquid. What is the temperature?

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3. Use a magnifier to look closely at the thermometer from the front and from the side. Look at the bulb and the thin tube that contains the red liquid.

4. Put your thumb or finger on the bulb and see if the red liquid moves in the thin tube.

B. Observe the red liquid in the thermometer when it is heated and cooled.

1. Place the thermometer in hot water and watch the red liquid. Keep it in the hot water until the liquid stops moving. Record the temperature in °C.

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2. Now put the thermometer in cold water. Keep it in the cold water until the liquid stops moving. Record the temperature in °C.

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*Analyze & Conclude:*

1. Based on what you know about the way molecules move in hot liquids, explain why the liquid in the thermometer goes up when heated.

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2. Based on what you know about the way molecules move in cold liquids, explain why the liquid in the thermometer goes down when cooled.

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3. Why do you think the tube that contains the red liquid is so thin?

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4. What do you think is the purpose of the larger outer tube?

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